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Minerals and Energy Division

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NEW BRUNSWICK COMPUTERIZED MINERAL OCCURRENCE DATABASE (Revised 2000)

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NEW BRUNSWICK COMPUTERIZED MINERAL OCCURRENCE DATABASE NOVEMBER, 2000

This is an update of the **New Brunswick Computerized Mineral Occurrence Database** (Rose and Johnson 1990). There are 1415 documented mineral occurrences. Diskette # 1 includes all necessary files [DEPOSITS, ROCKS, and TPA; and associated databases provided in both ASCII (MOasc2000.exe) and Excel (MOxls2000.exe) formats for your convenience] containing updated information on all the documented mineral occurrences within New Brunswick. Diskette # 2 includes text files in ASCII format (MOtxt2000.exe) for over 1300 of 1415 mineral occurrences. These files are numbered by URN (e.g., 0001.txt for URN 0001, 0507.txt for URN 0507, etc.).

The New Brunswick Computerized Mineral Occurrence Database is described in Mineral Resource Report 3 by Rose and Johnson (1990). The following text will describe some information that has changed since that release.

STRUCTURE OF THE DATABASE

The three enclosed files are described as follows: the DEPOSITS file contains the bulk of the data; the ROCKS file contains information on lithology, unit name (formation or group), age, etc.; and the TPA (tonnage/production/assays) file records quantitative data.

Each entry in a file is called a RECORD, and is composed of a number of fields (**NAME, LAT, LONG, COMMOD**, etc.) that are explained in detail in the section describing individual fields and codes.

The structure of the database is such that each RECORD in the DEPOSITS file represents one mineral occurrence. Since there may be several lithologies and one or more sets of assay data coded for each occurrence, there may be one or more RECORDS in the ROCKS file and one or more RECORDS in the TPA (tonnage/production/assays) file for each entry in DEPOSITS. Correspondence or linkage of the three files is achieved by means of a common record number, called the unique record number (**URN**).

DESCRIPTION OF FIELDS AND CODES

DEPOSITS FILE

The DEPOSITS file consists of 52 fields (three fields were added for the April, 1993 release). The descriptions of the individual fields, given below, have been grouped according to the field content.

The following fields contain names that serve to identify an occurrence, in addition to the URN.

FIELD	CONTENT
URN	Unique record number
NAME	Most commonly used name
NAME1	Alternate name

Each occurrence in the DEPOSITS file has a **URN** that serves as a link to corresponding records in two of the other files, ROCKS and TPA.

The next fields deal with general and specific locations of the mineral occurrences.

FIELD	CONTENT
NTS	National Topographic System 1:50 000-scale map sheet (E = east half, W = west half of sheet) (Figure 2)
NTS20000	National Topographic System 1:20 000-scale map sheet (Figure 2)
LAT	Latitude
LONG	Longitude
UTMZONE	Universal Transverse Mercator Zone (UTM, zone 19 or 20)

NOTE: Coordinates are all in the New Brunswick Stereographic Projection (northings and eastings), based on the Average Terrestrial System 1977. This field will now have "NB" to indicate NB Stereographic grid coordinates.

NORTH	Northing
EAST	Easting
HOWL	How the occurrence was located (Table 1)
OBJLOC	Object located, such as a map symbol or diamond-drill hole, and the source map or document

The locations have been defined by their latitude and longitude. UTM coordinates (northings and eastings) were calculated from the latitude and longitude values. The **HOWL** (how located) field provides a subjective indication of the precision of the latitude and longitude measurement. Methods of locating occurrences and the codes found in the **HOWL** field are shown in Table 1.

TABLE 1. CODES TO INDICATE PRECISION OF LATITUDE AND LONGITUDE MEASUREMENTS

HOWL Code	METHOD OF LOCATING OCCURRENCES
GPS	Location measured with GPS satellite navigation instrument (precision +/- 30 m)
1:250 000	Verified by person with first-hand information, on map of 1:250 000 scale or larger
ACCURATE	Clear "point" on map with grid
SEMI-ACCURATE	Clear "point" on map without grid (requires point to be transferred)
INACCURATE	Area or poor "point" on map with grid
VERY INACCURATE	Area or poor "point" on map without grid (requires point to be transferred)
VERBAL	Location deduced from written or verbal description
UNKNOWN	Location calculated by person other than coder (not re-measured)

101-04841/

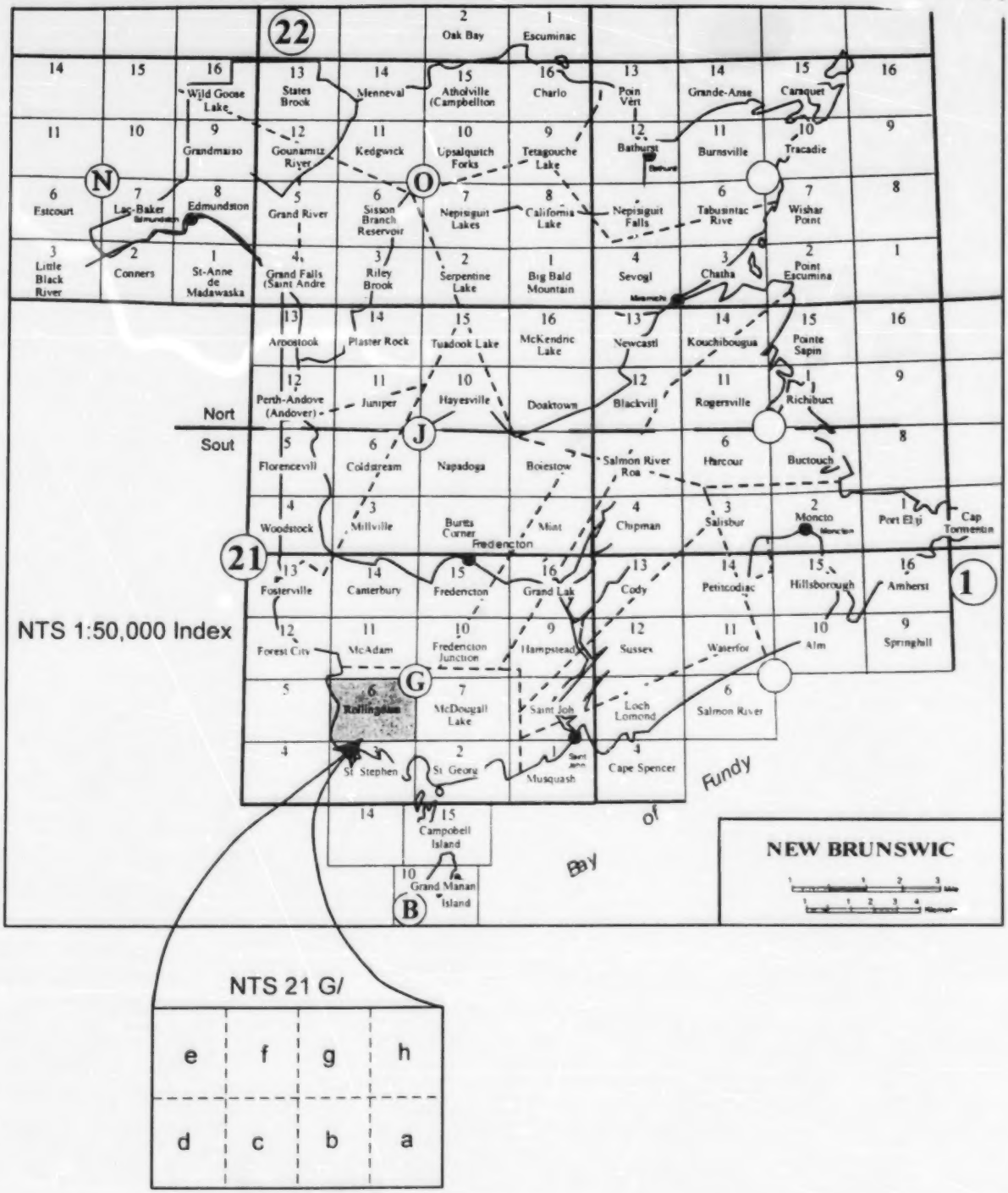

Figure 2. National Topographic System for New Brunswick

Fields documenting economic or potentialiy economic elements (commodities), their status of development and the minerals in which they occur are:

FIELD	CONTENT
COMMOD	Commodities (Table 2)
METAL	Metallic minerals
NONMETAL	Non-metallic minerals
ALTER	Alteration minerals

The **COMMOD** field contains one or more commodities together with codes for development status and chemical class(es) of the element. Status and chemical class codes are shown in Table 2. Each commodity is followed first by its status, then by one or two codes for chemical class: Cu 5/2 4). A development status code of 5 indicates that assay data are available for two dimensions (e.g., length + width). A status code of 6 indicates that an assay(s) over one dimension is available (e.g., a diamond-drill-hole intersection or a chip sample across a vein). Code 7 signifies that assays are available with no dimensions (e.g., grab samples), or that the commodity is known to be present but no assays are available. The chemical class of the element is given if the mineral in which it occurs is known. If a mineral has not been specified, the element will have a chemical class code of 6, meaning "not known."

TABLE 2. DEVELOPMENT STATUS AND CHEMICAL CLASS CODES IN THE COMMODITY FIELD

CODE	STATUS
1	Being produced
2	Tonnage defined
3	Past producer, with tonnage
4	Past producer, exhausted
5	Assays over 2 dimensions
6	Assays over 1 dimension
7	Commodity present

CODE	CHEMICAL CLASS
1	Native element, alloy, oxide or hydroxide
2	Sulphide, sulfosalt, arsenide, telluride, antimonide
3	Silicate
4	Sulphate, carbonate, phosphate, tungstate, borate, molybdate, chromate, vanadate
5	Halide
6	Not known

The deposit-type classification schemes and deposit characteristics are described in the following fields:

FIELD	CONTENT
NBTYPE1 & 2	New Brunswick deposit-type classification (See MRR 3, Table 3)
CDNTYPE1 & 2	Canadian mineral deposit types (See MRR 3, Table 4)
CHARCTR1 & 2	Deposit characteristics

RELHOST	Relationship of mineralization to host rocks
TERRANE	Terrane or cover sequence (Figure 3, Table 5)

Each occurrence has been classified according to a New Brunswick classification scheme established by Dr. A.A. Ruitenberg of the New Brunswick Department of Natural Resources and Energy. Provision has been made for two deposit types (**NBTYPE1** and **NBTYPE2**) for each occurrence if needed. The New Brunswick deposit types, their codes, and some examples can be found in MRR 3 (Table 3). Where applicable, as many as two Canadian deposit types (**CDNTYPE1** and **CDNTYPE2**) are provided in the database. The synopsis of Canadian mineral deposit types (Eckstrand 1984) and their numeric codes are shown in MRR 3 (Table 4).

Deposit characteristics are contained in a two-part text field, **CHARCTR1** and **CHARCTR2**, due to limitations of dBASE. The field **CHARCTR2** is a continuation of **CHARCTR1**. The description is essentially a summary of mineralization style, host and associated rocks, deposit dimensions, and form. The text field **RELHOST** describes the relationship between mineralization and host rocks. This field is commonly blank because the information has been given in the deposit character field or because the details are not known. Abbreviations used in the text fields can be found in Appendix II. Each record also contains a **TERRANE** field, which indicates the terrane or cover sequence in which the occurrence lies. The codes for terranes and cover sequences are given in Table 5 and their boundaries are shown in Figure 3.

The fields listed below document stratigraphic ages of the mineralizing event. Ages of the host and associated rocks are described in the **ROCKS** file.

FIELD	CONTENT
SAGEMINX	Minimum stratigraphic age of the mineralizing event (Table 6)
SAGEMAXX	Maximum stratigraphic age of the mineralizing event (Table 6)

The stratigraphic ages are defined by a numeric scale that is not related to measured (radiometric) age, i.e., an age code of 100 does not indicate an age of 100 Ma. The codes for stratigraphic ages are shown in Table 6. The minimum stratigraphic age of mineralization (**SAGEMINX**) is commonly unknown and therefore blank.

Details on structures, deformation, and metamorphism are in the following fields:

FIELD	CONTENT
RELSTRCT	Relationship of mineralization to structure
DEFORMED	Penetrative deformation of the host rocks
DEFDEP	Deformation of the deposit

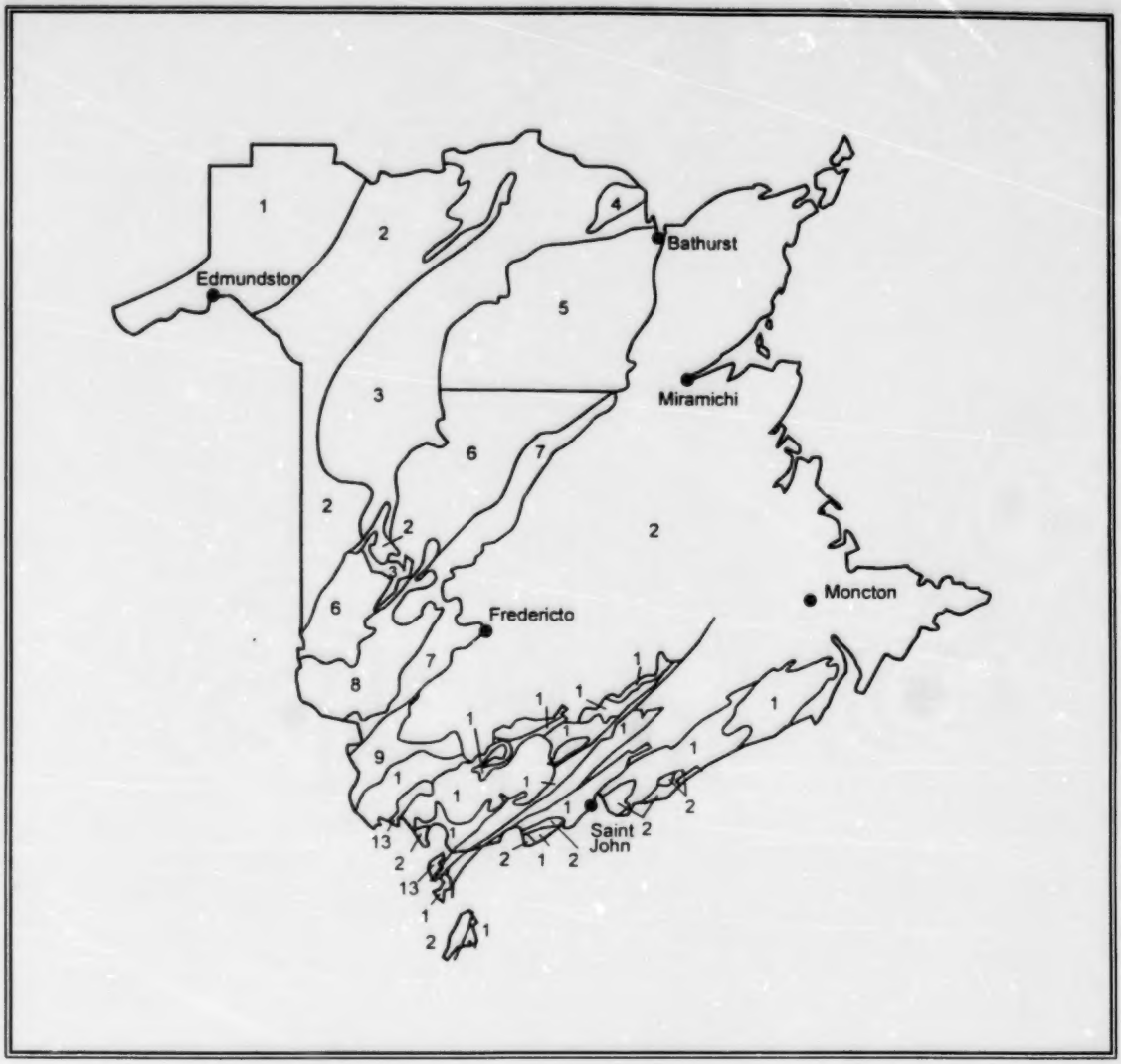

Figure 3. Tectonostratigraphic belts in New Brunswick. Numeric codes are given in Table 5.

RELMETA Relationship of mineralization to metamorphism

The fields **RELSTRCT** and **RELMETA** are text fields describing the relationships between mineralization, structure, and metamorphism, if known. Abbreviations used in text fields are given in Appendix II. Host rock deformation is indicated in the field **DEFORMED**, which may contain ?, NO, YES or YES-POLY (polydeformed host). Deformation of the deposit is indicated in the **DEFDEP** field by ?, NO, or YES.

TABLE 5.

CODES FOR TECTONOSTRATIGRAPHIC BELTS

BELT Code	BELT
001	EDMUNDSTON
002	KEDGWICK
003	TOBIQUE-CHALEUR
004	ELMTREE INLIER
005	MIRAMICHI NORTH (BMC)
006	MIRAMICHI SOUTH
007	KINGSCLEAR
008	POKIOK BATHOLITH
009	FLUME RIDGE
010	ST CROIX
011	ANNIDALE
012	SAINT GEORGE BATHOLITH
013	MASCARENE
014	QUEEN BROOK
015	NEW RIVER (& GM PALEOZOICS)
016	KINGSTON
017	BROOKVILLE
018	CALEDONIA WEST
019	CALEDONIA EAST
020	MARITIMES BASIN
021	FUNDY BASIN

The following fields contain an assortment of information pertinent to a mineral occurrence.

FIELD	CONTENT
GEOPHYS	Anomalous geophysical response(s)
GEOCHEM	Anomalous geochemical expression
REMARKS	Wide variety of additional information
NOTE	Geological or metallogenic information
CORE	Indicates whether drill core is available for examination
DISCOVER	Discovery of the occurrence: year, method, person or company
CLAIM	Status of the ground

TABLE 6.

NUMERIC CODES FOR STRATIGRAPHIC AGES

CENOZOIC			MESOZOIC			PALEOZOIC			PALEOZOIC			PRECAMBRIAN		
Period		Epoch	Period		Epoch	Period		Epoch	Period		Epoch	Eon		Era
Quaternary	10		Cretaceous	30		Permian	60		Silurian	100		Proterozoic	130	
	11	Holocene		31	Late		61	Late		101	Late		131	Late
	12	Pleistocene		32	Early		62	Early		102	Early		132	Middle
													133	Early
Tertiary	20		Jurassic	40		Pennsylvanian	70		Ordovician	110				
	21	Pliocene		41	Late					111	Late	Archean	140	
	22	Miocene		42	Middle	Mississippian	80			112	Middle		141	Late
	23	Oligocene		43	Early		81	(Windsor)		113	Early		142	Middle
	24	Eocene											143	Early
	25	Paleocene	Triassic	50		Devonian	90		Cambrian	120				
				51	Late		91	Late		121	Late			
				52	Middle		92	Middle		122	Middle			
				53	Early		93	Early		123	Early			

CLDATE Date on which the status was valid (**NOTE:** please verify this information with the Mining Recorder as it can change on a daily basis.)

The **GEOPHYS** and **GEOCHEM** fields are text fields listing some of the anomalies and are not meant to record a complete history of geochemical or geophysical work done. The **NOTE** field is provided for miscellaneous geological or metallogenic information, but it may also contain other types of information. The field **CORE** indicates whether drill core is available for examination at storage facilities maintained by the Department of Natural Resources and Energy. If core relevant to a particular occurrence is available, the field will contain YES followed by the location of the facility, for example, YES-MADRAN.

The **CLAIM** status and **CLDATE** (claim date) fields are essentially for internal use and will be updated periodically. The **CLAIM** field shows the status of the ground at the **CLDATE**. It contains one of the following: OPEN, STAKED, MINING (mining lease), GRANT (Crown grant) or RESERV (withdrawn from staking, e.g., national park).

Reference material for each occurrence is documented in the following fields.

FIELD	CONTENT
MAPREF1	Map reference (Tables 7 and 8)
MAPREF2	Additional map reference (Tables 7 and 8)
ONMAP1	Indicates whether the occurrence appears on **MAPREF1**
ONMAP2	Indicates whether the occurrence appears on **MAPREF2**
ASSESS	Assessment reports

Map references can be one of four types as shown in Table 7. The map type is followed by a map designation (i.e., map number and map source). An example is GEOL 647A GSC. The map source will generally be either DNR (New Brunswick Department of Natural Resources and Energy) or GSC (Geological Survey of Canada). Map designations and examples of map numbers are shown in Table 8.

The **ASSESS** field contains a listing of assessment reports applicable to the occurrence. The field comprises the assessment report number(s), the company or individual who filed the report, and the year(s) the report(s) was/were received by the Department of Natural Resources and Energy.

All of the fields described thus far comprise a record/occurrence in the DEPOSITS file. An example of a record is shown in Table 9.

TABLE 7. REFERENCE MAP TYPES

MAPREF Code	MAP TYPE
GEOL	GEOLOGY
LOCN	LOCATION
GEOP	GEOPHYSICS
GEOC	GEOCHEMISTRY

TABLE 8. MAP DESIGNATIONS FOUND IN THE MAP REFERENCE FIELDS

EXAMPLE	MAP DESIGNATION
MP 84-22	Map Plate (NBDNRE)
14-1964	Preliminary map (GSC)
1331A	Coloured map (GSC)
ASSESS 473145	Geology map from an assessment file
MEMOIR 1	Geology map accompanying NBDNRE Memoir 1; no plate number

There is now a field included that gives an overall rating system (STATUS) for the occurrences. The codes for this latter field are not given in Rose and Johnson (1991). They are:

FIELD	CONTENT
STATUS:	
1	Producer
2	Past producer
3	Assays over three dimensions, tonnage may be defined but no production carried out
4	Assays over two dimensions
5	Significant occurrence with assays over one dimension (diamond-drill-hole or channel sample) or grab samples
6	Minor occurrence with assays over one dimension (diamond-drill-hole or channel sample) or grab samples
7	Minor occurrence; mineral present but no significant assay values, if at all carried out
8	Insignificant or currently with insufficient or inaccurate information

ROCKS FILE

The ROCKS file contains additional (lithologic) information on the host and associated rocks for each occurrence in the DEPOSITS file. Each record in the ROCKS file comprises the 11 fields listed below. Each occurrence has a minimum of one record in the ROCKS file describing the host rock. If an occurrence is hosted by more than one rock type, there are additional records. There are also records for

rocks spatially associated with the occurrence. Each record contains the unique record number (**URN**) corresponding to the occurrence in the DEPOSITS file.

FIELD	CONTENT
URN	Unique record number
CAT	Category of rock (host or associated)
ROCKTYPE	General classification of rock type (Table 10)
META	Type of metamorphism affecting the rock
METGRADE	Degree of metamorphism (Table 11)
UNIT	Lithostratigraphic or lithodemic unit (group, formation or member)
SAGEMIN	Minimum stratigraphic age of rock [Table 6; Figure 4 (Please note: this Figure is not available digitally - see Figure 4 in MRR 3)]
SAGEMAX	Maximum stratigraphic age of rock (Table 6; MRR 3 - Figure 4)
RAGE	Radiometric age of rock
RAGEUN	Radiometric age uncertainty
METHOD	Method of radiometric dating and source of data

The field **CAT** (category) contains an H if the rock being described is a host, or an A if it is an associated rock. The code appearing in the field **ROCKTYPE** represents a general lithotype classification (Table 10). The purpose of this field is to organize the rock type data for retrieval in a search.

Metamorphism (**META**), if present, can be one of three kinds: (1) contact metamorphism (C), (2) regional metamorphism (R), or (3) dynamic metamorphism (D). The degree of metamorphism (**METGRADE**) can be any of the types listed in Table 11.

The **UNIT** field contains the lithostratigraphic or lithodemic unit to which the rock belongs. The Lexicon of Canadian Stratigraphy (Williams et al. 1985) has been used as the definitive source of formal unit names. Informal terms have been used when a formal unit has not been assigned. To distinguish informal from formal unit names, quotes have been used with the informal terms. If no unit name has been proposed, the **UNIT** is entered as UNNAMED followed by the rock type (e.g., UNNAMED GRANITE).

Stratigraphic and radiometric ages of the rocks (**SAGEMIN, SAGEMAX, RAGE** and **RAGEUN**) should not be confused with the stratigraphic and radiometric ages of the mineralizing event in the DEPOSITS file (**SAGEMINX, SAGEMAXX, RAGEX** and **RAGEUNX**). Stratigraphic age of the rocks, like age of mineralization, is represented by the numeric codes listed in Table 6; the generalized stratigraphic distribution of New Brunswick rocks is shown in Figure 4 (please refer to Mineral Resource Report 3, p. 23). Radiometric age and uncertainty are given in millions of years.

TABLE 9.
Example of a record in the DEPOSITS file

URN:	0035
NAME1:	Cape Spencer Mine
NTS	21 H 04 W
LAT:	45 11 54
LONG:	65 54 52
UTMZONE:	NB
NORTH:	655499
EAST:	346230
HOWL:	UNKNOWN
OBJLOC:	NB MINERAL OCCURRENCE FILE
COMMOD:	AU 2/1, FE 7/1, CU 7/2, AG 7/6
METAL:	GOLD, CHALCOPYRITE, SPECULARITE, PYRITE, PETZITE, GALENA, SPHALERITE, SILVER
NONMETAL:	QUARTZ, ANKERITE
ALTER:	ILLITE, SILICA, CHLORITE, CARBONATE
NBTYPE1:	VN
NBTYPE2:	—
CDNTYPE1:	—
CDNTYPE2:	—
CHARCTR1:	GOLD OCCURS MAINLY AS MICROSCOPIC GRAINS IN DISSEM PYRITE ADJACENT TO AND WITHIN QTZ-CARB VNS IN ILLITIZED, HIGHLY SHEARED SED RKS OF THE "CAPE SPENCER FM", AND SHEARED GRANITE. THE VEINS, MAINLY CONC ALONG D2 FOLD NOSES, LOCALLY BEAR CHALCO AND PYRITE. LOCALLY HADRYNIAN.
CHARCTR2:	GRANITE IS THRUST OVER THE SEDIMENTS.
CORE:	NO
DISCOVER:	EARLY 1800S/C. 1980-M. GORDON
CLAIM:	MINING
CLDATE:	89 01 31
TERRANE	018 - CALEDONIA WEST
SAGEMINX:	PERMIAN, EARLY
SAGEMINX:	PERMIAN, EARLY
RELHOST:	GOLD IS GENERALLY ASSOCIATED WITH THE HIGHER CONCENTRATIONS OF PYRITE IN ILLITE-ALTERED ZONES, WHICH IN GRANITE OVERPRINT AN EARLIER CHLORITE ALTERATION.
RELSTRCT:	THE ALTERED ZONES ARE IN N-TO NE-TRENDING, GENTLY PLUNGING FOLDS ASSOCIATED WITH LATE CARBONIFEROUS D2-PHASE (POST S1) THRUSTING.
DEFORMED:	YES-POLY
DEFDEP:	YES
RELMETA:	—
GEOPHYS:	SPECTROMETER DETECTS POTASSIUM-ALTERATION
GEOCHEM:	GOLD IS PRESENT IN TILL AND HUMUS
REMARKS:	K/AR WHOLE ROCK AGE FOR THE GRANITE (LEXICON, PG. 250), REFLECTS CARBONIFEROUS DEFORMATION
NOTE:	AR/AR DATES FROM ILLITES (NBDNRE IC 87-2) WERE PRELIMINARY RESULTS, AND HAVE BEEN UPDATED.
MAPREF1:	GEOL, MP 83-29 DNR
ONMAP1:	YES
MAPREF2:	GEOL MP 83-74 DNR
ONMAP2:	YES
ASSESS:	472832/472897/473038/473165/GORDEX MINERALS/1982/1982/1984/1984/1984
CODED BY: DGR, CODED DATE: 86 10, REVISED BY: WWG	
REVISED DATE: 90 03, FLD CHECKED BY: WWG, DATE: 87 01 01	
STATUS: 2	

TABLE 10. LITHOLOGIES AND CODES IN THE ROCK TYPE FIELD

ROCKTYPE Code	Rock Type
	Intrusive Rocks
IF	Felsic to intermediate
IM	Mafic to ultramafic
	Volcanic Rocks
VFL	Felsic to intermediate lava
VML	Mafic to ultramafic lava
VFT	Felsic to intermediate tuffaceous rocks or agglomerate
VMT	Mafic to ultramafic tuffaceous rocks or agglomerate
VFB	Felsic to intermediate breccia
VMB	Mafic to ultramafic breccia
VF	Felsic
VM	Mafic
V	Unspecified
	Sedimentary Rocks
SCG	Conglomerate
SST	Sandstone (arkose, siltstone, greywacke)
SMS	Mudstone (shale, argillite)
SLS	Limestone
SDS	Dolostone
SCH	Chert
SEV	Evaporite
SIR	Iron formation
	Other
MY	Mylonite
UC	Unconsolidated
UK	Unknown (obscured by metamorphism)

Records in the ROCKS file are identified by the unique record number since the occurrence NAME is not repeated. As previously stated, each occurrence in the DEPOSITS file may have more than one corresponding record in the ROCKS file. For example, the Millstream iron occurrence, number 425 in the DEPOSITS file, is described as being hosted by "limestone" and limey "argillite" in the contact aureole of the "Nicholas Denys granodiorite". This occurrence has three records in the ROCKS file, corresponding to the two host lithologies and one associated rock type as shown in Table 12.

TABLE 11. METAMORPHIC FACIES AND CODES

METGRADE Code	Regional Facies
SUBGREEN	Subgreenschist
GREENSCH	Greenschist
AMPHIB	Amphibolite
LOAMPHIB	Lower amphibolite
UPAMPHIB	Upper amphibolite
GRANUL	Granulite

METGRADE Code	Contact Facies
ALB-EPID	Albite-epidote hornfels
HORNBLDE	Hornblende hornfels
PYROXENE	Pyroxene hornfels

TPA FILE

The TPA file contains tonnage, production, and assay (sample) data. Each record in this file contains the 24 fields described below. A record may represent an assay or set of assays, a reserve/resource estimate, or a production figure. Like the ROCKS file, a given occurrence may have multiple records. If, for example, both production and reserve/resource figures are available, the occurrence will have two records in the TPA file, one detailing production and one describing reserves/resources.

TABLE 12. Examples of records in the ROCKS file for one occurrence

FIELDS	RECORD 1 Limestone	RECORD 2 Argillite	RECORD 3 Granite
URN	425	425	425
CAT	H	H	A
ROCKTYPE	SLS	SMS	IF
META	C	C	——
METGRADE	HORNBLDE	HORNBLDE	——
UNIT	CHALEURS GROUP	CHALEURS GROUP	NICHOLAS DENYS GRANODIORITE
SAGEMIN	100	100	93
SAGEMAX	100	100	93
RAGE	——	——	392
RAGEUN	——	——	12
METHOD	——	——	K-Ar on biotite/Lexicon of Can. Strat.

FIELD	CONTENT
URN	Unique record number
TPA	Indicates whether the record contains tonnage (reserves)/resources, production, or assay data
STARTYR	Year production started, or tonnage or assay figures reported

ENDYR	Year production ceased
TONNES	Reserve/resource or production tonnage (thousands of tonnes)
TYPE	Type or category of reserves/resources (Table 13)
PROD	Material produced (Table 13)
CU	Copper grade or assay in per cent (%)
PB	Lead grade or assay in per cent (%)
ZN	Zinc grade or assay in per cent (%)
AU	Gold grade or assay in grams/tonne (g/t)
AG	Silver grade or assay in grams/tonne (g/t)
MOS2	Molybdenite grade or assay in per cent (%)
NI	Nickel grade or assay in per cent (%)
SN	Tin grade or assay in per cent (%)
WO3	Tungsten (oxide) grade or assay in per cent (%)
COMM10	Additional commodity
GRADE10	Grade or assay of **COMM10**
COMM11	Additional commodity
GRADE11	Grade or assay of **COMM11**
COMM12	Additional commodity
GRADE12	Grade or assay of **COMM12**
DETAILS	Details on the information provided above
SOURCE	Source of information

The **TPA** field indicates whether the record contains tonnage (T), production (P) or assay (A) data. The letter is followed by a number (1, 2, 3, etc.) to indicate it is the first, second, or third set of data. For example, **TPA** = A2 signifies that the record contains the second assay or set of assays for that occurrence. If no assays are available, but there is other pertinent information, the record will contain AO in the **TPA** field and the unique record number for identification.

If reserve/resource figures are given (i.e., when **TPA** = T1, T2, ...), the year in which the reserves/resources were reported is contained in the field **STARTYR** and the calculated tonnage within the **TONNES** field. The type of reserves/resources quoted by an individual or company will be in shortened form in the field **TYPE**. For **TYPE** codes see Table 13.

When a record contains production information (i.e., when **TPA** = P1, P2, ...), both of the fields **STARTYR** and **ENDYR** are used and the **TONNES** field contains the tonnage produced over those years. The tonnage is in thousands of tonnes. The material produced (ore, concentrate, or metal) is given in coded form in the **PROD** field (Table 13).

When a record contains assay information from grab samples or diamond-drill-hole intersections, (i.e., if **TPA** = A1, A2, ...), **STARTYR** contains the year the assays were reported.

The fields **CU, PB, ZN, AU, AG, MOS2, NI, SN,** and **WO3** may contain grades for reserve/resource or production tonnages, or analytical results from samples taken at an occurrence. To accommodate commodities (elements or compounds) not listed above, the fields **COMM10**, **COMM11**, and **COMM12** are provided. Their grades or assays are given in **GRADE10, GRADE11**, and **GRADE12**, respectively.

TABLE 13. RESERVE AND PRODUCTION CODES

TYPE Code	Reserve/ Resource Category *
PROV	Proven reserve
PROB	Probable reserve
CRSRV	Combined reserve
MEAS	Measured resource
INDIC	Indicated resource
INFER	Inferred resource
CRSRC	Combined resource (measured + indicated)

PROD Code	Material Produced
O	Ore
C	Concentrate
M	Metal

* CANADIAN INSTITUTE OF MINING AND METALLURGY. 1998. Reserve Definitions. CIM Bulletin, **91**, No. 1017, pp. 44-45.

The fields described above comprise a record in the TPA file. An example showing the TPA file entries for the Heath Steele A-C-D zones is given in Table 14 (on following page).

TABLE 14. Example of Records in the TPA File for One Occurrence

FIELDS	RECORD 1 Tonnage figure	RECORD 2 Production figure
URN	0395	0395
TPA	T1	P1
STARTYR	1985	1983
ENDYR	—	1984
TONNES	4700.0	183.0
TYPE	INDIC	—
PROD	—	O
CU	1.00	0.00
PB	1.31	0.00
ZN	5.34	0.00
AU	0.00	20.71
AG	48.40	171.65
MOS2	0.00	0.00
NI	0.00	0.00
SN	0.00	0.00
WO3	0.00	0.00
COMM10	—	—
GRADE10	0.00	0.00
COMM11	—	—
GRADE11	0.00	0.00
COMM12	—	—
GRADE12	0.00	0.00
DETAILS	GEOLOGICAL ORE RESERVES FOR A-C-D ZONES: AS OF MAY 1985	GOSSAN ORE FROM WEATHERED CAP ATOP A-ZONE/TREATED BY CYANIDE LEACHING FROM JULY 1983 TO OCT. 1984
SOURCE	DAVIES ET AL. GAC/MAC EXCURSION 2, 1985	DNR INFO. CIRC. 84-1 AND INFO. CIRC. 85-2